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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/019,293 | 01/04/2002 | Shuji Machida | 217043US0 XPCT | 8819 |
| 22850 | 7590 | 04/23/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | LU, C CAIXIA | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1713 | | |

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/019,293 | MACHIDA ET AL. |
| | Examiner | Art Unit |
| | Caixia Lu | 1713 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16, 19-33, 35, 36, 38-42 and 44 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 7, 9-14, 16, 19-33, 35, 36, 38-42 and 44 is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 6, 8 and 15 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/27/04
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____

DETAILED ACTION

1. Claims 6 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Weng et al. (US 6,184,327).

The instant claims are directed to a graft copolymer obtained by copolymerizing a branched olefin macromer such as a propylene macromer and an α -olefin comonomer in the presence of a metallocene catalyst, wherein the branched macromer has a weight-average weight ranging 400-200000 and vinyl content of at least 70 mol% and further meets any of the criteria of (i) to (iii). For example, criterion (iii) requires the macromer has the number of branches falls between 0.01 and 40 per macromer.

Weng teaches graft copolymers prepared by copolymerizing propylene macromers having Mn of 2,000 to 50,000, Mw/Mn of 1.5-5, and 85% of vinyl groups based on total olefin groups in the macromer and propylene in the presence of a metallocene catalyst such as dimethylsilyl(tetramethylcyclopentadienyl)-(cyclododecylamido) titanium dichloride (col. 4, lines 55-65; and Examples 1-4, Table 2). While Weng does not expressly indicate the macromer contains branches, it is recognized in the art that macromers prepared in the presence of metallocene catalysts are linear long chain branched and such is disclosed in, e.g., Brant et al. (WO 94/07930), see the paragraph bridging pages 5 and 6. Thus, Weng's working examples read on the instant claims.

2. Claims 6 and 8 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tatsumi et al. (WO 98/55520, however, the US equivalent, US 6,573,352, is cited hereinafter).

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Tatsumi's Examples 1-3 demonstrate the preparation of a graft polypropylene having Mw/Mn, intrinsic viscosities and macromer unit contents in the ranges of the instant claims 6, 8 and 15. Tatsumi's macromer, in general, have a weight average molecular weight from 2,000 to 500,000 (col. 12, line 51). Based on the molecular weight of the graft polymer and the macromer content in the graft polymer of the working examples, the molecular weight of the macromer of the working examples must be in the range of the instant claims.

Although the prior art examples do not disclose the vinyl content in the macromer, the macromers disclosed in the prior art are made by processes using catalyst compositions which are very similar to those disclosed in the instant specification and Weng as shown above. Under these circumstances, one of the ordinary skill in the art would have expected that the claimed limitations would be inherent in the prior art polymers.

Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, the burden of proof is shifted to the applicant to show an unobvious difference. In re Fitzgerald, 205 USPQ 594. In re Fessmann, 180 USPQ 324. Applicants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsumi et al. (WO 98/55520, however, the US equivalent, US 6,573,352, is cited hereinafter).

Tatsumi's teaching is relied upon as shown above. Tatsumi does not expressly disclose whether there is vinyl-terminal group on the graft polymer of Examples 1-3.

While the indicated limitations are not in the cited prior art, the examiner takes official notice that it generally known practice in the art to hydrogenate the undesired double bonds in the polyolefins to provide a more stable polyolefin product.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to hydrogenate Tatsumi's polyolefin to provide a more stable polyolefin product and in the absence of showing criticality and unexpected result.

Response to Arguments

4. Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.
Primary Examiner
Art Unit 1713